



# Solid Copy

*The International CWops Newsletter*

March

2016

Issue No. 74



**2016 Total Solar Eclipse - Indonesia**

## CWops “CWT”

**Every Wednesday**

**Regular Tests: Full Speed**

Start times: 13Z, 19Z, 03Z (+1)

1-hour each session

Exchange: name/number (members)

name/SPC (non-members)

**(Avoid DX pileups!)**

## CWops “neighborhood”

Look for CWops on 1.818, 3.528, 7.028,  
10.118, 14.028, 18.078, 21.028, 24.908, 28.028,  
50.098

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## Table of Contents

[President's Message](#)

[From the Editor](#)

[News & Notes](#)

[North American CW Weekend](#)

[NA6O Woodbug](#)

[W0UCE – SK](#)

[RM-11759 – Club Comment](#)

[Morse Code and the Kidnapped Boy](#)

[CW Academy](#)

[How We Were – N6IET](#)

[CWops Tests](#)

[CWops Members Awards](#)

[New Members](#)

[Nominees](#)

[QTX Report](#)

[Operating Events](#)

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## President's Message

We are two months into 2016 and activity



continues unabated. My activity, however, is a bit abated. We had a nasty winter wind/rain storm here and I'm now confined to two bands – 20 and 40 meters. But I am still going to do at least one band per CWT session.

March is a month to celebrate the graduation of our January-February semester of CW Academy students. Sadly, it is also a time to mourn the passing of Jack Ritter, W0UCE, who was instrumental in developing and nurturing CW Academy. When Jack first proposed using online audio/video group calling as a way to group beginners and others, some were skeptical. But his idea paid

off big time and is largely responsible for the success of our program. For example, I advised two students in the UK this semester, meeting both at 1:00 PM PST/2100 UTC. It went splendidly and could never have been as reliable if we had tried doing it on the air. Of course, the distances involved would have made it impossible to do it in person. But using Skype made it practical for the three of us to meet each Monday and Thursday. So we now have two Level 3 graduates – Phil, G4NVR and Dave, M0GGK – who have not only joined CWops but also have both volunteered to advise new Level 1 students. CW Academy works and it is becoming self-perpetuating. Thank you, Jack, and RIP OM.

Once again, CWops will have a booth and presence at the Dayton Hamvention in May. I will reach out again soon to ask for volunteers to service the booth. We will have at least two people on hand from opening to closing on both Friday and Saturday. Shifts will be one hour each and, as always, we will have water and snack food. So, stay tuned.

In June we will also participate in the CW Enthusiasts weekend. If you have never been there, it's a really fun time. Bring your significant other and explore DC and surroundings. Meet fellow CW enthusiasts for pizza on Friday, brunch on Saturday, and dinner on Saturday. It is a very low-key event and a great chance to meet some new folks, see some old friends, and stay at a first-class DC-area hotel for an unbelievable \$99 per night! I'll be there and I would love to see you.

As I mentioned on the reflector, Dean, NW2K, will step down as CW Open manager. I am looking for someone (or "someones") to take on this yearly CWops-sponsored event. Dean has graciously agreed to provide some transitional support and Alan, AD6E, will continue to do the heavy lifting on log adjudication. The manager's primary job is publicity and writing up the report after log checking has been done and results gathered. I would really love to have this co-managed by three people – one in North America, one in Europe, and one in Asia – thereby representing all ITU regions. But I am open to all possibilities. If you are interested, please email me (k6rb@baymoon.com) and let me know. Thanks.

We have also added a new ambassador to our group for Africa North (AFN). Please welcome Jean, 5T0JL, to the ranks of CWops ambassadors. While you are at it, check the openings for ambassadors, and if you would like to be considered for any of them, please email me (k6rb@baymoon.com). The role of the ambassador is to be the go-to person in your ambassadorial region who can talk about CWops, its activities, how to become a member, and how to sign up for CW Academy.

73,

**Rob K6RB**

[Back to Contents](#) [Next article](#)

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## From the [Editor](#)



### Total Solar!

As hams, we're pretty interested in the sun. "Ol' Sol" provides the sunspots that ionize our atmosphere, creating the primary mechanism for HF radio signal propagation. When the sunspots go away, as they did during the last sunspot minimum, high band propagation pretty much goes away, too. So any interruption in the flow of that magical, ionizing radiation could be subject for concern. Fortunately, the ionosphere can tolerate a few minutes of blockage here and there and that is exactly what happened on March 9 as the moon slid in front of the sun, resulting in the rare and spectacular phenomenon of a total solar eclipse. Only 0.3% of the earth's surface experienced totality, at most for a little more than three minutes, and most of the curving path of the moon's umbra (full shadow) was over water. It was a rare, lucky and quite possibly prescient individual who managed to view this celestial wonder under clear skies on land. But it's easier on the sea where a ship has the capability to maneuver to a location on the path of totality that offers sufficient open sky so that its passengers can bask in the darkness. And that's what the captain of the elegant, 200-passenger French cruise ship *Le Soleal* did on the night of March 8 to 9, navigating 100 miles from our original plan to a spot equally out of sight of land but largely unobscured by clouds. A few wisps of atmospheric moisture provided occasional opportunities to photograph the partially-eclipsed sun behind lovely filaments of red (at least through my brand of solar filter), but almost all of the three hours of partiality and three minutes of totality were clear and spectacular. Success!

The Page 1 photo comes from this trip to the Malay Archipelago (VK, YB, 9M), my fourth eclipse trip but first attempt at solar photography. Focus was difficult as my camera declined to autofocus on the moving target (a downside of shipboard viewing) and manual focus through its digital viewfinder and display was touchy at best. As explained by popular eclipse-chasing astronomer Rick Fienberg, one of our on-board lecturers, "someone else's pictures are always better," but I was satisfied with my first attempt and, as usual, in absolute awe of the experience. Our other lecturer, MIT Professor Rick Binzel, offered an image of the [sun eclipsed by Pluto](#) from the recent successful encounter by the New Horizons spacecraft for which he served as a co-investigator. That was a wonderful novelty and documented the very first opportunity for humanity to view a Pluto-solar eclipse.



I'm batting four for four now – four successful viewings out of four tries – and my self-assigned appellation of "casual eclipse chaser" risks escalation to "mildly addicted." One of our fellow travelers had seen 24 total and 17 annular solar eclipses in his long life. I don't have time to come close to that! But totality is so different from partiality that it must be experienced to be understood. If you haven't yet joined the ranks – if you are still an "eclipse virgin" as they call it within the fraternity – do consider it. The next

opportunity is August 21, 2017 across North America, on a path from Oregon to South Carolina, easy destinations for many of our members, albeit already heavily booked in the areas most likely to enjoy clear skies.

## Other Matters

Others will comment in this issue of *Solid Copy* on the untimely [passing of Jack Ritter W0UCE](#), but I must note my own sadness at the loss of this outstanding radio amateur. Jack gave so freely and so well of his time and expertise that even those who never met him still benefited indirectly from his efforts. We will all miss his friendship. RIP, OM.

## Whining Worked!

Last month I whined that I had run out of articles. The response was great, with so many submissions that I have held several back for the April issue. Thanks, and keep the good stuff coming!

However, this issue is late due to my afore-mentioned trip. Sorry, gang, I couldn't re-schedule the eclipse! It also didn't help that Microsoft updated Word for MacOS and (accidentally, I'm sure) turned the debugging feature known as Reveal Formatting perpetually ON! Unable to live with dots in every word-space, paragraph markers all over the place, and other meta-data obtrusively displayed while editing, I found myself back on Windows, transferring each of many contributions via email relays and a Dropbox tunnel between OSs. Yuck! (Yes, I know there are things I can do to my environment to mitigate stuff like this, but I didn't anticipate this need and they haven't been accomplished yet.)

But I think you will find that the issue was worth the wait. See, for example, the outstanding write-up by NA6O on his beautiful, wooden bug. His report is more than just a project overview; it includes a technical analysis of the design and some lovely photographs of the work, in progress and finished. Gary is both an engineer and an artist of merit. Be warned that I've already put myself in line if he ever decides to manufacture these beauties commercially! We also have a rare piece of radio fiction from Jerry AC4BT. Check out [his latest on Sherlock Holmes](#)! Many have commented on RM-11759, the FCC proposal to increase spectrum for RTTY and other digital modes. Our [club made formal comment](#) as did many individual members. See also an interesting discussion on CW in the noise in the regular [CWT column](#) and all the usual features. Enjoy the issue.

73,

**Rick** N6XI

Editor

[Back to Contents](#)

[Next article](#)

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## News & Notes

### Jerry Weisskohl AC4BT

*This is a column where members can report their activities, happenings and achievements, both radio-related and personal. Please send brief notes to Jerry AC4BT at [jweisskohl@gmail.com](mailto:jweisskohl@gmail.com).*

**Rob, K6RB:** After “Stormzilla” stormed through Santa Cruz last month, it left me stranded with an inoperative, mast-mounted 8-PAK switch. A few days later I got up to the switch using a boom lift and found that it had been either blown off its mounting or pulled off by tension on the coax but in either case it was now sideways to the wind and partially filled with water. So I emptied out the water, disconnected the ShackLAN cable and 10 coax lines, and brought it inside to inspect the damage. Well, the relay driver board (it turns out) was damaged beyond repair, and there were no replacement parts. I asked that the board be sent back so I could see about micro-soldering some conductors between the IC pins and connector pins which were now no longer connected due to electrolysis. And I also purchased a new, second generation, outdoor model 8-PAK switch subsystem to replace the old one. I should have it soon and will get back up there, mount it securely, reconnect all the lines, keep my fingers crossed, and hope that I can once again see eight different antennas with either radio.

It’s hard to be in the top-10 CWT list when you are stuck with hardwired 20 and 40 meter antennas.

But at least I’m not QRT! 😊

**Emil, I5EFO:** For those who want to make QSOs with other CW fans, I want to bring to the attention of all CWops members that every Friday at 2000 GMT, around 14.056 MHz, the NET devoted mainly to OM of North America is held. This NET is for the members of Royal Signals Amateur Radio Society (RSARS, <http://rsars.org.uk/>) of which I'm a member, because in my “youth” I served as a Lieutenant in the Italian Signal Corp at the NATO troops in North East Italy.

The RSARS has a long history commencing 1952. This Weekly Overseas CW Net of Royal Signals Amateur Radio Society attracts those well versed in the art of Morse from all parts and extends the possibility of CW QSOs, adding to other clubs such as FOC, SKCC, FISTS and other "naval" clubs. Also it is very common to hear, at any time, RSARS Members on 14.056 MHz, being it is their preferred DX frequency"

**Mike, VE9AA:** I like to do the CWT’s but often miss them as I am a “working stiff.” Occasionally I’ll dash out to the MINI in the parking lot, but this is not always convenient as 1300z/1900z coffee breaks only line up part of the year (or it’s very cold).

Recently, I have found something that perhaps other members like me could use from their desk/office with zero investment. I am using TEAMVIEWER software to access my PC (and thus radio) at home so I can get on at 13z and 19z from work for 10-15mins some of the year and don’t need to run out in sub-zero weather to a cold car or invest any money at all in software or hardware at either end.

I miss the N3ZN paddle, but otherwise it's like I am sitting at the rig. In my own case, delays are long behind a corporate firewall and a slow Internet at home. However, it does work and I think most users could master this in short order.

[Back to Contents](#)

[Next article](#)

---

## **North American CW Weekend**

**3-5 June 2016**

**Fairview Park Marriott**

**Falls Church, Virginia**

The 2016 CW Weekend will take place June 3-5 at the Fairview Park Marriott in Falls Church, Virginia. This is open to all hams or others with an interest in CW or Morse code communication - FOC, CWOPS, SKCC, the Morse Operators Society, FISTS, etc. It is predominantly a social event and provides a great opportunity to connect with old friends, make new ones, and enjoy those eyeball QSOs with folks you have worked on the bands for years.

As in years past, we'll kick off with an informal pizza dinner on Friday evening, followed by a brunch on Saturday morning hosted by Jim N3JT and Nina KE4PSV at their home in McLean. Dinner will follow that evening at Clyde's in Tysons Corner. There will be a hospitality suite with refreshments at the hotel on Friday and Saturday evenings. Sunday morning, many attendees meet informally at the hotel restaurant for breakfast before heading home or on to other activities. It is likely that Frank, W3LPL, will provide a tour of his world class contest station on Sunday afternoon if there is interest.

Early June is a nice time of year to visit the Washington, D.C. area, and the schedule allows plenty of time for sightseeing, shopping, and socializing, or visiting with family and friends.

A block of rooms has been set aside at the Fairview Park Marriott at a special rate of \$99. You may reserve by calling the hotel at 800-228-9290. Be certain to mention you are with the "North American CW Weekend party." Reservations may also be made online at [marriott.com/wasfp](http://marriott.com/wasfp). The special booking code for our group is "NACNACA." The special rate is available from June 3 through June 6.

There will be a modest registration fee of \$15 per person or \$25 per couple to cover refreshments and the hospitality suite, payable by check to Don Lynch, 1517 W. Little Neck Rd, Virginia Beach, VA 23452-4717. Further information is available from Don, W4ZYT ([w4zyt.don@gmail.com](mailto:w4zyt.don@gmail.com)) and will be posted on the FOC and CWOPS web sites.

We really do look forward to seeing lots of CW folks at this gathering. Talk it up, mark it down, and come to D.C.!

[Back to Contents](#)

[Next article](#)

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## W0UCE – Silent Key

So many tributes poured in when Jack Ritter became a Silent Key that it is impractical to publish them all. Here are a few:

### **From K7SV:**

June 12, 1938 was a day no different than any other in “Small town USA.” Grinnell, Iowa was a city of about 5000 that year, a city at the intersection of two railroad lines and along an old pioneer’s pathway in east central Iowa. However, what was different on this day, in this town, was that Jack Ritter was born.

A normal childhood ensued for young Jack and at 14 years of age he became fascinated with radio communication. Mostly, however, he became infatuated with the language of Morse Code, taking to the language immediately and becoming conversationally proficient in it almost overnight. He became amateur radio operator W0UCE.

He became so good with this language that in his adolescence, and under the tutelage of several well-known radio engineers and entrepreneurs, he became an instant child prodigy at Morse. His circle of friends and mentors included persons like Art Collins of Collins Radio, and Bob Denniston, a prolific DXpeditioner and a former President of the ARRL.

After high school graduation came the military years where Jack’s strength in the Morse language landed him at Navy radio school. It turns out that his prowess in Morse was better than the instructors who were teaching that same language to students and Jack was relegated to helping teach the “less than stellar students,” a job he excelled at using his own training techniques that bucked some of the established coaching methods at the time.

Upon graduation from radio school, Jack’s first orders came with a move to Maryland where he was assigned as a secure Morse operator for our country’s main government agency that “leads the U.S. Government in cryptology that encompasses Signals Intelligence (SIGINT) in order to gain a decisive advantage for the Nation and our allies under all circumstances.” Yes, a military person at a civilian agency. He was stationed outside of Washington, D.C.

Several years later, Jack met and married Frances Swann, had two children and saw tour duties to Rota, Spain and then to Vietnam.

Jack returned from SE Asia with orders to Navy Radio Station, Cheltenham, MD. This cold war radio intercept station also required the use of his incredible expert Morse skills, skills that required perfect decoding of dots and dashes that were sent and received as coded words and/or numbers. It was while stationed at NavRadSta, in 1967, that Jack became a member of the radio contesting club PVRG, Potomac Valley Radio Club.

After 13+ years of service to his country, Jack became a sales and marketing mastermind and worked with many telecommunications companies. His hobby as an amateur radio operator and the corresponding radio electronic knowledge had created the path to his illustrious career. Along the way, Jack became an in-demand square dance caller, an auctioneer, and even a real estate agent. All the while, Jack enjoyed his amateur radio hobby and his Morse language skills and mentored countless ham radio friends.

Several years ago, Jack became a charter member of a Morse code aficionado club known as CWops. Several of the members created a curriculum to help assist the burgeoning Morse code enthusiast and Jack, who felt the need to give back to a hobby he so loved and to a language that he so enjoyed – Morse code, dots and dashes - quickly became a senior advisor for this endeavor. In the past three years or so he successfully graduated over 30, four to six member, six week classes. Several of his current and former students attended the memorial service to honor him. The man just kept on giving.

Over the years, WØUCE was logged by hundreds of thousands of amateur radio operators with his long history of National Traffic Service (NTS) as well as hundreds of CW radiosport activities both under his call sign and many others in multi-multi or multi-single operations, most recently at N1LN, N3ND, and at the Goat Farm, NR4M. He was an active member of CWops and FOC as well as other CW-centric organizations.

I don't believe there is anyone who met Jack who could ever forget him, as he seemed larger than life itself. His close friends and associates will always remember his humor and his politics! He built many, many relationships over the years, the tens of thousands of his world-wide amateur radio friends, his business acquaintances, and his neighbors.

Jack's Morse code key is now silent. There will no longer be dots and dashes sent by his hand. But his legacy, the memories, the man will never be forgotten.

RIP, WØUCE

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From EA5DFV:

I'm shocked and very sad. A sad irony for a great CW-op to pass away in the ARRL DX CW morning.

I met Jack in my first visit to North Carolina and for me it's a tremendous honor and pride to be a member of a club that has people like Jack WØUCE.

We ran some contests together at the QTH of Bruce N1LN where, as usual, Jack, aka Chef Archie, did a great job preparing delicious meals and working CW.

Jack was always friendly and kind to me: the last day of the past year, I met Jack and a group of PVRC-NC friends for lunch and he invited me and I told him that he always fed me when I was in NC and he said that the next time I have to make a paella (typical Spanish dish). I'm in debt to you, Jack.

When I complained about how bad my CW was, he told me that with lessons it would improve in short time. And I'm sure that this would have been, is not that right, Rob K4OV?

I will miss Jack in my visits to NC, in the NCQP and in the PVRC Reunions.

My condolences to all his family.



RIP, OM Jack.

73,

Jose Miguel Femenia-Herrero EA5DFV

[Back to Contents](#)

[Next article](#)

---

## The WoodBug: A Semiautomatic Morse Key

Gary W. Johnson, NA6O

### Abstract

A new semiautomatic Morse key has been fabricated almost entirely of wood. Its primary design feature is a very low inertia mechanism that permits exceptionally sensitive operation similar to high-performance iambic paddles. Magnets, used in attraction mode, are used in lieu of springs and provide crisp action. Lever force adjustments are made via a novel rotary adjuster. A magnetic reed switch is the dot contact, and dot weighting is precisely adjustable while operating. No lock nuts are used for any adjustments; 56 TPI threads with an interference fit provide high-resolution positioning and are vibration resistant. Overall form factor is a compact 6 by 3 by 1.8 inches and it weighs 2.0 lb.



### Introduction

Semiautomatic Morse keys, otherwise known as speed keys or bugs, have been useful tools for telegraphers for over 100 years and are still popular among amateur radio operators. A few commercial manufacturers still exist, but more interestingly, numerous home builders are still

innovating in this area (e.g. WB9LPU, WA9TGT), creating novel and beautiful bugs. I am a member of the latter category.

One thing all these designs have in common is that they are made entirely of metal – most commonly brass – though the base is sometimes made from other materials. For some reason, wood has been overlooked. Being an experienced woodworker and having previously built a Morse hand key that worked out well (Figure 1), this felt like an opportunity to me. I started experimenting with various bug components and doing some engineering calculations and soon realized that a wooden semiautomatic key was not only feasible, but may offer some advantages over conventional metal construction. This report will cover the background and construction details of my *WoodBug*.



**Figure 1.** Morse hand key, made by the author in 2008. Cocobolo.

Bugs are like musical instruments in that they are subject to much personal preference regarding their mystical “feel” as well as overall performance, reliability, ease of adjustment, and aesthetics. My goal in this project was to design a bug with lower inertia and the possibility of a lighter touch that more closely emulates state-of-the-art iambic paddles. Also, I wanted to simplify some of the adjustments, in particular eliminating locknuts and also improving adjustment resolution.

### **Why Wood?**

Wood is among the oldest engineering materials but is too often overlooked outside its common applications such as construction and furniture. Like many natural substances, it has some exceptional properties and is of course beautiful, but does require care in selection due to variations among species and even within a single sample.

An old saying is, “pound for pound, wood is stronger than metal.” Table 1 shows that wood is certainly competitive, at least in one parameter, Specific Stiffness, which is the ratio of the modulus of elasticity to mass. This parameter is of particular interest in a mechanical structure where we seek a compact, light, yet stiff assembly. If a very stiff structure is desired, one can also adjust the dimensions to optimize section modulus, perhaps in a particular direction. Where low mass is needed but without high strength, you can turn to much lower-density species such as Balsa and Basswood.

**Table 1.** Properties of Selected Species of Wood and Some Metals

Material	Modulus of Elasticity, MPa	Density, g/cc	Specific Stiffness
Steel (1050)	210	7.85	26.7
Brass (C36000)	97	8.5	11.4
Aluminum (6061-T6)	70	2.7	25.9
Maple, Sugar	12.6	0.67	18.7
Cocobolo	19	1.1	17.3
Ebony, Gabon	17	0.96	17.7

Wood is highly machinable and tool life is very long except with certain exotic species that may contain mineral deposits. Holding tolerances better than 1 mil is not a problem, especially in dense, diffuse-porous species.

The main problem with wood is its expansion across the grain in response to humidity, which can be significant. This will be the major source of “drift” in a precision instrument such as a bug. Temperature coefficient of expansion is not much of a concern, especially in small assemblies. Long-term warping of larger pieces, for instance the base of the bug, could also affect alignment to some degree, but that is a very slow process.

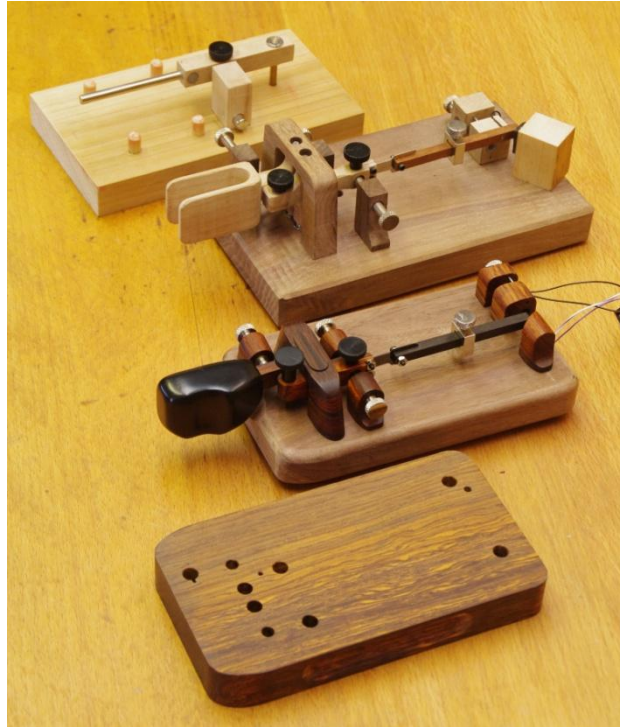
### Tooling for Wood

If you are more of a machinist than a woodworker, treat wood like plastic. Use high positive rake, very sharp HSS cutters, 2-flute endmills, and high surface speeds. Saws of all types are great for roughing. Slitting saws work great and last forever. Files are very effective for detailing and breaking sharp corners. Precision holes can be reamed, holding tolerances of a few tenths of a mil without problem. Don’t worry too much about the dust on the ways of machine tools. It’s not abrasive and simply wipes away. Infinitely better than machining cast iron!

If you are a skilled woodworker and wish to build something on the scale of this *WoodBug* and with suitable precision, it may be difficult to do so without access to a lathe and mill. That being said, most of the special operations can probably be done with nothing more than a drill press and a few special cutters. For instance, the finest X-Acto razor saw works just about as well as a slitting saw, and leaves a kerf around .013 inches. Very careful layout, knife-marking, and centering of holes is mandatory.

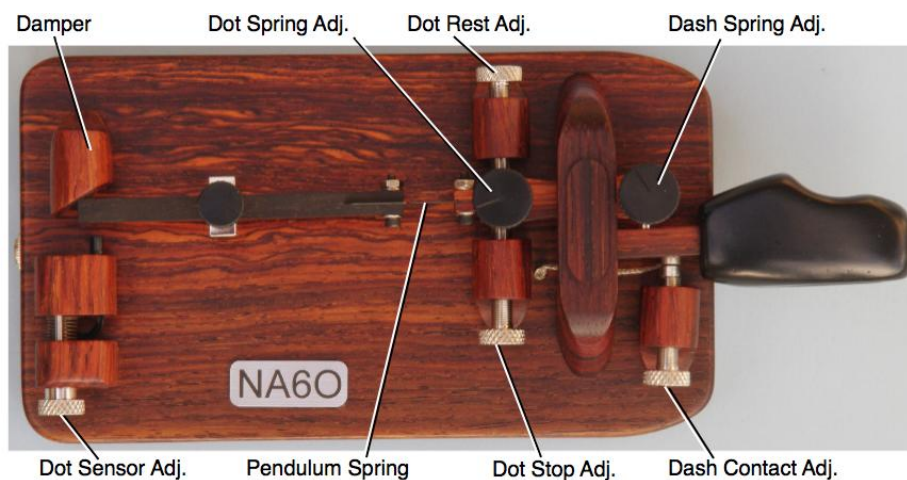
### Development Process

Many experiments were performed on candidate materials, components, and fabrication methods over the four-month duration of this project. These elements were integrated into mechanical testbeds so that I could do some operational evaluations. For once, the term *breadboard* may be used literally!



**Figure 2.** Development proceeded from breadboards to the final article

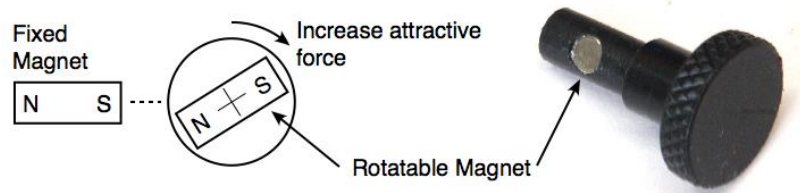
Cocobolo was chosen as the primary timber due to its density, high strength, good machinability, and spectacular grain. The weight arm is ebony, which is extremely hard and smooth. The fingerpiece is carved from basswood to reduce weight in this large component. I shaped it to fit my particular finger position, matching height and spacing of my favorite paddle. Final finish is Watco oil and wax, except for the fingerpiece which is black enamel.



**Figure 3.** Top view of the Woodbug showing its main features.

## Magnetic Force Adjusters

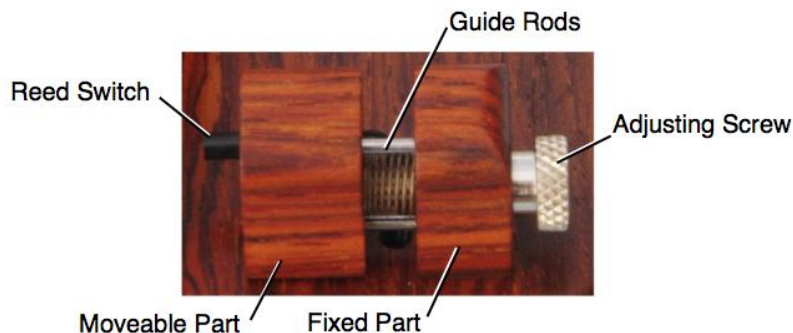
Instead of springs, this bug uses magnets in attraction mode to provide return forces on the dash and dot levers. One of the novel mechanisms in the *Woodbug* is a rotatable magnet assembly that allows you to vary the force without the need for linear displacement of one of the magnets (Figure 4). The assembly is very compact and quite sensitive. I chose to use attraction rather than repulsion because it yields a “snappy” feel when actuated.



**Figure 4.** A rotatable magnet allows adjustment of return force.

## Dot Sensor

A magnetic reed switch (Meder Standex MK 20/1-B-100W) is located at the end of the pendulum arm and is triggered by a magnet in the end of the arm, thus generating dot closures when the pendulum oscillates. For operator convenience, the sensor is mounted on a linear slide mechanism with an adjusting screw (Figure 5). While generating a string of dots, duty cycle can easily be adjusted.



**Figure 5.** Dot sensor adjustment mechanism. The entire assembly is about 1.25 inches long.

## Adjustment Screws

I have always noted that classic bugs use overly-coarse threads for sensitive adjustments, and I’m mildly annoyed by the need for a second hand to tighten the locknuts. In the *Woodbug*, extra-fine pitch threads (#10-56) are tapped in Delrin inserts that are then pressed into wooden mounts. Thumbscrews are machined from brass (later nickel plated) and threaded with a #10-56 adjustable die that is oversized to guarantee an interference fit. This provides high drag, a long service life, and no need for lock nuts.

For the fixed dash contact, a hybrid insert, split into Delrin and brass portions, is pressed into the mount. A wire is then soldered to the brass part. All contacts are machined from Sterling silver and diamond-polished to 1 micron.



## Pendulum

The *Woodbug* uses a conventional, horizontal pendulum with a spring-steel spring. To minimize total system inertia, a very limber spring was chosen, made of 8-mil feeler gage stock. The weight arm is made of Gabon ebony, and the brass weight weighs only 6 grams. Speed adjustment range is 18 to 40 WPM.

## Damper

Quite a bit of experimentation went into the damper, whose purpose it is to quickly stop motion of the pendulum upon release of the lever. With the very small amount of kinetic energy in the *Woodbug*, this is not a trivial task. A conventional bug's damper, which operates by momentum transfer to a weight and then dissipation via friction, was scaled down and tested with various geometries and materials but was never satisfactory. Then, various compliant materials were tested with mixed results. Ultimately, a low-durometer polyurethane was selected and mounted at an angle so as to maximize point-loading on its surface (Figure 6). Slow-motion movies, taken on a smart phone (Try it! Works great!), showed that all motion stops after just one reduced-amplitude cycle.



**Figure 6.** Closeup of the damper, with its soft polymer material mounted at an angle so as to maximize point force.

## Bearings

Double-shielded precision ball bearings support the main pendulum and the dash arm, with one bearing above and another below. Nearly all bug and key craftsmen have switched to these modern bearings, thus avoiding the adjustment, wear, and damage problems of traditional bugs.

## Keeping it Put

Weight of the Cocobolo base alone is insufficient for vigorous use, so I cast a block of lead which is set into the bottom of the base. Another discovery was that selection of material for the feet is more critical than I imagined. A very low durometer rubber (e.g., 3M Bumpons) were my first choice in that they are very sticky. But that compound is overly-compliant, and the entire bug acts like it's sitting in a bowl of Jell-O! After some more experiments, a much stiffer rubber sheet material was selected (butyl rubber diaphragm sheet), cut into thin disks, and glued into place.

## Performance

Here are my operational impressions of the *Woodbug*. The primary goal of low inertia and high sensitivity was clearly met. I found that I could send dashes somewhat faster on this bug though I'm

still in need of more practice getting used to it. Operating forces can be adjusted to a very low level, though you can also set the spacings very wide and return forces quite high to emulate a conventional bug. While your first impression is that of a delicate device, it turns out you can really slam it around if you are old-school. Magnetic return action is positive and snappy. The dash contact is very solid. The wooden fingerpiece never feels cold. The bug weighs enough to prevent any walking about. Adjustments have a silky feel to them and I do not miss those locknuts at all!

A drawback of magnetic tension for dots is that it seems more likely that you may produce a short dit, as compared with conventional spring-mounted dot contacts. It takes practice to overcome this tendency.

Adjusting the pendulum rest position against the damper is more critical than conventional bugs. In the quest for extreme sensitivity, it's also possible to adjust the throw on the pendulum to a very small distance (less than 8 mils). However, this is asking for trouble because damping may be unsuccessful, resulting in an extra partial dit no matter how hard you try.

Overall, I'm very happy with the final build and look forward to some quality air time. Wonder what I'll build next?



[Back to Contents](#)

[Next article](#)



## CWops Club Comments on US FCC RM-11759

The CW Operators' Club (CWops) is in favor of the ARRL petition, and recommends that it be adopted by the FCC.

Our membership consists of approximately 1,200 amateurs who are especially active using CW.

In recent years, we've noticed that more and more RTTY/Data stations are using frequencies traditionally used only by CW stations. This trend is worrisome since RTTY/Data modes are becoming increasingly popular. Furthermore, there has been a rebirth of CW activity – especially by newcomers to amateur radio. Together, these factors are expected to eventually lead to serious interference problems between RTTY/Data stations and CW stations. Allocating RTTY/Data stations a larger band of frequencies will reduce their potential for causing interference to CW stations. Therefore, the ARRL's proposed increase in the frequency allocation for RTTY/Data modes is an appropriate way to ameliorate (for now) the increasing RTTY/Data interference to CW stations.

As a long-term solution, we respectfully suggest considering the establishment of CW-only allocations throughout the HF spectrum according to the Band Plans of the International Amateur Radio Union (IARU) available at [www.iaru.org](http://www.iaru.org). These Band Plans (for each of the ITU regions) harmonize the use of amateur emission modes and have been agreed upon by the national amateur radio societies representing amateurs throughout the world (including the ARRL).

James Talens, N3JT

Secretary, The CW Operators' Club (CWops)

[Back to Contents](#)

[Next article](#)

---

## Morse Code and the Case of the Kidnapped Boy

**Jerry Weisskohl AC4BT**

“Watch out Holmes!” Dr. Watson cried, as the buggy careened off the cobblestone, kicking up stones and sand and then just as quickly disappeared back into the smoky fog like a runaway train. Holmes continued on, oblivious to the carriage that almost struck him down.

They crossed Baker Street and Sherlock Holmes continued his brisk pace, talking to himself out loud as he was wont to do whenever deep in thought on a case.

“Watson, must you walk so slowly? Quickly, old man! The day is not getting any younger. What do you make of this?”

Dr. Watson finally caught up with Holmes, a little out of breath but nonetheless intrigued by what might lie ahead. “I don't see anything, Holmes. Have you been self-medicating again? I warned you about the lasting effects of that seven percent solution you so favor...”

“Nonsense, Watson, it's not your eyes that demand attention, but your ears. Perk your ears up and listen, listen closely. Hello? There it is again, faint clicking sounds but discernable.”

“Yes, I hear it Holmes. Why, it sounds like Morse code!”

“Yes indeed, very well formed Morse code and also very slow. ‘PO HELP, PO HELP’, over and over again, a few seconds of silence and then the same message repeats.”

Holmes, it appears to be coming from directly above us, from the post office.”

“Watson! It’s a skinny young lad around 6 or 8 years old, somewhere above the post office, locked in a room. The boy must have found an old Morse Key and is held in a room, probably a storage area.”

“Holmes, how on earth can you possibly know that?”

“Elementary, Watson. The Morse code keys in use at post offices tend to be very heavy as there is no need to move them around as they do in the States. They are locked in place on a desk. Since the keys are heavy, the lever requires a fair amount of force to operate and to generate the “dits and dahs.” While this is of no consequence to a post worker, being a grown man possessing a grown man’s strength, it would indeed be quite a feat for a young lad to lift and press the arm of the key repeatedly. Therefore, it must be a boy, a thin boy, lacking the strength of a grown man. The speed of the Morse is slow. A post worker would have obtained a working speed of at least 30 wpm. This is more around 5 wpm, 7 wpm to be exact, from my calculations. The code is clean, albeit slow, thus it is being sent by a young boy lacking the strength needed to operate the key at a faster pace.”

“Holmes, that matches the description of the missing boy, the kidnapping case Scotland Yard is working on!”

“Watson!, we have located the kidnapping victim and the scoundrels who hold him captive directly above us on the 2<sup>nd</sup> floor of this post office!”

“Not a moment to lose, Watson! Give that newspaper boy on the street corner a shilling with the promise of another to follow once he fetches a constable, as quickly as he can, and directs him to the upstairs floor of the post office.”

Dr. Watson did as Holmes requested, returning in a moment’s time, short of breath but ever alert, his surgery-honed eyes sharp and focused on the task at hand.

“Watson, quickly! Draw your revolver and keep it on the ready. You’ll hold their attention by pretending to inquire about a package that never arrived from Devonshire while I go around back and locate and free the boy.”

“Be careful, Holmes.”

“The games afoot, Watson!”

Soon thereafter, the front door to the post office bursts open and Inspector Lestrade, accompanied by two of Scotland Yard’s finest, takes in the scene and stops dead in his tracks. The henchmen are apprehended, their hands and feet aptly secured by rope, seated and staring down at Dr. Watson’s revolver. The lad, no worse for wear, is busy relating the full story of how he came to be kidnapped and the henchman’s plan to collect the ransom.

“Why, if it isn’t Mr. Sherlock Holmes and Dr. Watson. What have we here?”

“Nice of you to join us, Lastrade,” said Holmes. “You’ll find the case wrapped up. The young lad here, a Mr. Alan Turing, will give you the details. He’s a smart boy with a bright future who I predict will go on to do great things. I’m sure tomorrow’s papers will tell of how Scotland Yard and a certain Inspector Lastrade once again masterfully solved the case.”

“Young man, come around to my flat, 221B Baker Street, tomorrow morning,” added Holmes. “I can use a smart lad as yourself. You can run several errands for me. Keep up with your Morse code, I fear there’s a storm coming of the kind England has not seen before and Morse code will play an important role in the defeat of her enemies.”

“Watson, it is time for us to depart. The lad is in good hands and there is work to be done. Lastrade, do give our best to the proprietor of the Bellshire Tavern and apologize for your rudeness in leaving in such a haste.”

“Mr. Holmes, how could you possibly know I was just there?” asked Lastrade.

“Elementary, Lastrade. It is well known from the many interviews you give the papers that you favor a certain old pea soup recipe. The only pub that is worthy of your approval that serves this soup is the Bellshire Tavern. The newspaper boy didn’t have far to run to find you and your men at the tavern, which is only a five minute brisk walk from here, and even less time for a young boy with swift feet. Once you heard the urgency in my messenger’s voice, you abruptly left to answer the call, spilling a trace of soup on the front of your uniform in your haste. I point to the green dried substance now on your clothes that is no doubt the pea soup you are so fond of.”

“Amazing piece of deduction Mr. Sherlock Homes!” exclaimed Lastrade, as he rubbed his chin in awe of Mr. Holmes’ abilities.

Walking away in the distance, Holmes can be heard saying...

“Watson, I must tell you about the dream I had last night and the same dream the night before that. Five letters in Morse code came to me each time “CWops”.

“It must have some special meaning, Holmes.”

“Indeed Watson, this might well be a three pipe problem to ponder, but right now we have bigger problems to deal with, my good friend. I fear we are late again for one of Mrs. Hudson’s prize suppers. There’ll be hell to pay for that!”

[Back to Contents](#)

[Next article](#)



## CW Academy

**Jerry AC4BT, Rob K6RB and Will WJ9B**

The end of February marked the completion of the CW Academy (CWA) January-February 2016 semester. Unfortunately, it also marked the end of an era with the passing of Jack Ritter W0UCE. Jack was a huge positive influential force in CW Academy and in CW in general.

What stood out with Jack that made him different and placed him on the “Top Shelf,” compared to the rest of us, was his huge heart in wanting to help people. Jack continually double- and triple-booked himself to the point where he had little free time left. All his time was devoted to helping people, whether it was the volunteer work he did at the hospitals or the countless hours he spent coaching us in CW. He was a mentor to me as he was to dozens of others. I remember many contested email exchanges with Jack. When I kept disagreeing with him on some topic I would get a short email that simply said “call me.” We would continue our debate on the phone until we came to an agreement, which usually meant finding merit with both sides. Jack would always ensure I understood the reason behind things and this helped me grow in my understanding of “Everything CW.”

The first work day after hearing of Jack’s passing I got into my car in the morning to drive to work as I usually do. I turned on my iPhone to listen to QSOs for head-copy practice while I drove the 30 minutes to work. I immediately noticed that the CW was much faster than the 40 wpm I usually listened to. At the next traffic break I stared down at my iPhone and discovered that the speed was now set at 44 wpm. I didn’t change the speed so how it got changed I have no idea. I’d like to think that Jack had something to do with that. He was always saying and encouraging me to just “Take it to the next level.” Well, I left it at 44 and began working at that speed and I am making even more progress in the short few weeks that have gone by.

“Take it to the next level.” I think Jack would have wanted us to think about that and see what that means to all of us individually. It may mean getting on CWTs on a regular basis, it may mean getting on the air more and working CW and being there for others who may be looking for their first CW QSO or just someone to talk to. It may mean writing an article for *Solid Copy* or calling or emailing that ham friend that you haven’t heard from in years and setting up a sked to get on the air or it may mean volunteering your time as a CW Academy advisor, helping others and continuing the work that Jack started, the work that he was so passionate about.

We should give that some personal thought and make a commitment individually and also collectively as a CW community to address “Taking it to the next level” in Jack’s memory honoring him for all the things he has done for CWops and for the CW community.



The CW Academy January-February 2016 semester graduated **119** CW students who were led by 34 Advisors and 9 Associate Advisors.

Below is a list of Advisors, Associate Advisors, and student graduates from this semester:

**January – February 2016 Semester – 34 Advisors and 9 Associate Advisors**

**Advisors – 5 classes**

Jerry AC4BT

**Advisors – 4 classes**

Jack W0UCE (SK)

**Advisors - 3 classes**

Rob K6RB

**Advisors - 2 classes**

Ed K6HP, Jack NI8N

**Advisors – 1 class**

Barry W4LSV, Dallas K1DW, Paul K4JAZ, Mac NN4K, Lar K7SV, Don K6ZO, John W2IU, Mike WH6YH, Dan N5TM, Bill K5LN, Andy WB7DKZ, Vic WB6SEL, Dave KM6ZT, Bob WR7Q, Danny KF7Z, Kate K6HTN, Vic WD0EBZ, John KE6K, Scott KF7GGN, Joe N3HEE, Mark K5GQ, Will WJ9B, Stew GW0ETF, Alex PA1FOX, James VK4TJF, Steve ZL2KE, Vic 4X6GP, Ron WM9Q, Atsu JE1TRV

**Associate Advisors**

Tom, N2TRJ, Dale W7HLO, Randy K4ODL, Val WD4EXI, Dave W5TRX, Del W5QQ, Joe KK5NA, Bob K9FS, Mike WH6YH

**January – February 2016 Semester – Students who completed: 119 graduates**

**Level 1 Graduates: 68**

Christopher KC1DPA, David AJ4TF, John KM4JTE, Ed N2BHD, Seth K2DIW, Dan KB7EIU, Nickolas W4NDF, David N8DLL, Richard KD8MUP, Matthew AB3KP, Doug N3OJB, Jim W0BNW, Kenneth KE4RG, Herman VE3HED, Robie KS3S, Corey K3CPK, Justin KI4WFJ, Paul K1TB, Sumter W7ZP, Silas KC4DUT, Kevin K5KD'T, Paul W4PGM, Greg KC1CIC, Greg W9SDX, Jerry AE4PB, Mike AC2Q, Jim KC2SZ, Mark W9MNM, John KB9BNI, Cory NV3Y, Gregory AB5I, Eric N0YET, Nancy K9DIG, Jim KB5RK, Dave KD9VT, Don VE4DFM, Wayne K5UNX, George KC9ZRB, Allen N5NYM, Robert KC9PPO, Tim K7MAQ, Darin KF7GTC, William AI6JZ, James N0SJ, Debra KG7BFP, David K7AHF, Keith KJ6RUA, Buz AC6AC,

Michael W7XTZ, Richard AG5M, Richard AB6XG, John W7JKC, Ben N3BEN, Bob K6IWA, Jim W5MEZ, Gary K7ORG, Gregg W7GEM, Philip KL7JJE, Helmut OE4HDS, Colin G1ZOS/DD5CF, Cassiano EI5HPB, Peter VK3ZPF, Timothy KD8KYK/9V1TB, Richard ZS6RKE, Derek ZS6DM, William KU9N, Dai JE6JAR, Hisa JR2WLT

**Level 2 Graduates: 26**

Bob K4RLC, Gary KW4MG, John WB4AVX, Ron KA1MR, Bruce KK4GEE, Mike, W4OCO, Len KC1AID, Derick AB9PR, Ric KC1RL, Frank N3HIH, James AB1DQ, Matt WS9F, Wayne KU4V, Charles N2SO, Ron N4KPJ, Kevin VE4MR, Gary NX8L, Joe W8JPF, Cory WA3UVV, John KD0NQC, Monk K5HP, James N4TMM, Donald KR3A, Renze VE6DC, Gary AE7OV, Mike KC6SSE

**Level 3 Graduates: 25**

Gerald N5KT, Jay WB5K, Mike KG4MTN, Marshall KA1CFP, Bob N7WY, James K5JLP, Bruce W5BQ, Bill W5ZV, David AE4QQ, Ron NX8Y, Doug VE3MV, Ron VE3FXX, Rob K4OV, Jim W5TUF, David AK4IC, Bill WB8HF, Keith G0HKC, Daniel WB4RFQ, Ken WB9QDL, David M0GGK, David W6BK, John W7SAG, James F6DM, Matt K7MGR, Phil G4NVR

**73,**

***Jerry*** AC4BT

*CW Academy is managed by Rob K6RB, Will WJ9B and Jerry AC4BT.*

[Back to Contents](#)

[Next article](#)

---

# How We Were – N6IET

by [Hank Garretson W6SX](#)

Rich Studsman, N6IET, CWops #1466

I grew up in Carlsbad, NM and got interested in ham radio at age 14. I remembered that my former Cub Scout den mother's husband had some kind of a radio shack behind their house. He was Lee Almy, W5WBD. He had a 10/15 meter cubical quad with "Armstrong" rotor next to his shack. He used a National HRO-50 receiver with a Heathkit DX-100 plate modulated transmitter. He lent me an Instructograph Morse code practice machine with vacuum tube oscillator and spring-wound punched tape mechanism to send practice 5-letter code cyphers. I had learned Morse code for a Boy Scout merit badge. It took me two weeks to get my code speed to 7 wpm and pass the Novice exam.

I got my ticket in the mail about six weeks later (after my 15th birthday in August, 1960). My first station was a Philmore general coverage receiver kit and a used Heathkit AT-1 CW transmitter (about 20 watts output) into to an end fed longwire antenna (no tuner) routed under the eaves of our roof. My first contact on 7153 kHz was with Fred, KN5EIE in El Paso. Everything I touched in the shack gave me RF burns. :-)

**K5FMF** - With the help of another Elmer, Dick Bickers, K5EHB, I earned my Conditional ticket a month later (issued in September). I built a Heathkit DX-60 and used it with a Navy surplus regenerative receiver, mostly on 40 meter CW. I also checked into a 40 meter phone net regularly called "The New Mexico Breakfast Club". (A bunch of old fogies. Now *I'm* an old fogy!)

About a year later I built a Heathkit HG-10 VFO and a Knight-kit R-100 receiver. Here's what I and my station looked like.





Please send YOUR *How We Were* Photos to [w6sx@arrl.net](mailto:w6sx@arrl.net)

[Back to Contents](#)

[Next Article](#)

---

## CWops Tests

by [Rich Ferch VE3KI](#)

The March 9 slow-speed CWTs seem to have gone off pretty well. There were quite a few CWA advisors and graduates, as well as other unfamiliar call signs that showed up, so the slower speed does seem to have worked as intended.

There was a bit of discussion on the Topband reflector a while back about recordings AB7E had made to demonstrate the importance of even a single dB in improving readability ([http://www.ab7e.com/weak\\_signal/mdd.html](http://www.ab7e.com/weak_signal/mdd.html)). He also recorded some call signs at various CW speeds in the presence of noise to see the effect of CW speed on copy of signals through noise. I can't say that I saw a tremendously large effect of CW speed on copy in his recordings, but I think he makes a significant point nonetheless.

If the noise is intermittent, sporadic noise bursts, or in the presence of QSB, then there are times when higher CW speed may actually help, by getting your complete call sign through between noise bursts and/or fades. However, if the noise is fairly continuous, like power line noise, or the noise from all those switch-mode power supplies we are surrounded by these days, then slower CW speed may allow the receiving operator's brain to take advantage of time integration to improve copy – sort of similar to the way QRSS signals can get through in very weak signal situations while normal-speed CW is too weak to make it. In assessing this, you need to remember as well that it's the noise at the other end of the path that matters, not the noise you are hearing at the transmitter end.

There is also a perhaps more obvious effect, namely that CW speed tends to have a selection effect on who you will work. If your speed is high, many newbies and casual operators will not bother to call you. Late in a long contest when you have already worked the regulars, slowing down can net you a bunch of contacts you might otherwise have missed. On the other hand, going slowly not only reduces your rate, it may even cause some of the big guns to pass you by, figuring they don't want to lose time in a slow QSO. In a short test like the CWTs, that can be a significant factor if you are trying to build up a high score.

The information you are trying to send makes a difference too. If your call sign or the exchange you are trying to send is full of dits, most people will find it harder to copy at higher CW speeds, and you may need to slow down a bit.

This all points out the importance of adaptability, to be able to adjust to the situation as it changes.

As for the main subject of AB7E's web page, namely the significance of differences as low as 1 dB, I think his point is well taken. Of course, the easiest way to gain a few dB is to add an amplifier and run higher power, but that only works up to a point. It makes you more easily heard, but does nothing to help you hear. As the saying goes, if you can't hear them you can't work them.

If you find that people are often asking you for repeats, running more power may help. If you find you often have to ask other stations for repeats, or if you can quite often tell that someone is trying

to call you but you can't quite pull their signals out, then maybe it's your receiving that needs improving. Higher power won't help there; what you need is a better antenna. An antenna with a narrower beam width improves the signal-to-noise ratio of signals you receive by rejecting noise from other directions. On the lower bands, the easiest way to do this is with a directional receive-only antenna, which explains the popularity of these antennas on 160m.

Next month I'll try to put together a first-quarter report on the chase for CWT participation awards.

We do the CWTs because they're fun; let's all make sure they continue to be fun for everyone.

73,

**Rich,** VE3KI

[Back to Contents](#)

[Next Article](#)

## CWops Awards

[Pete W1RM](#) and [Peter W1UU](#)

*The Annual Competition Award (ACA) is based on the number of members worked each calendar year. You get one point per member worked, once per year. It resets to zero at the beginning of each year. The Cumulative Member Award (CMA) is based on how many members you've worked since January 3, 2010 on each band and continues to grow in perpetuity. The CWops Award Manager (CAM) software, available at no cost, will help you keep track of your ACA and CMA totals.*

Call	ACA	CMA		Call	DX Total		Call	WAS		Call	WAE		Call	WAZ
VE3KI	464	3737		<b>W1RM</b>	<b>164</b>		<b>N5RR</b>	<b>50</b>		<b>W1RM</b>	<b>48</b>		W1RM	38
W1RM	443	4070		<b>F6HKA</b>	<b>144</b>		<b>W1RM</b>	<b>50</b>		<b>F6HKA</b>	<b>44</b>		F6HKA	38
F6HKA	408	4012		<b>W4VQ</b>	<b>135</b>		<b>W4VQ</b>	<b>50</b>		<b>N5RR</b>	<b>43</b>		W4VQ	37
G4BUE	401	3111		<b>G4BUE</b>	<b>119</b>		<b>F6HKA</b>	<b>50</b>		<b>G4BUE</b>	<b>43</b>		G4BUE	37
N5RR	387	3781		<b>N5RR</b>	<b>114</b>		<b>W1UU</b>	<b>50</b>		<b>OK1RR</b>	<b>42</b>		N5RR	36
N8BJQ	382	3824		<b>OH2BN</b>	<b>112</b>		<b>VE3KI</b>	<b>50</b>		<b>VE3KI</b>	<b>41</b>		VE3KI	35
K1ESE	301	2225		<b>VE3KI</b>	<b>109</b>		<b>G4BUE</b>	<b>50</b>		<b>W4VQ</b>	<b>40</b>		IK0YVV	32
W4VQ	271	2341		<b>EA8OM</b>	<b>109</b>		<b>EA8OM</b>	<b>50</b>		<b>OH2BN</b>	<b>40</b>		N5PHT	28
W0VX	263	2549		N8BJQ	99		<b>W0EJ</b>	<b>50</b>		<b>EA8OM</b>	<b>40</b>		JF2IWL	25
NU7Y	232	479		K1ESE	95		<b>F6JOE</b>	<b>50</b>		N8BJQ	39		W6NS	19
DL8PG	222	1687		SM6CNN	93		<b>W6KY</b>	<b>50</b>		AA3B	38			
IT9MUO	201	967		OK1RR	93		<b>N1EN</b>	<b>50</b>		SM6CNN	37			
K3SEN	197	834		AA3B	91		<b>N5PHT</b>	<b>50</b>		F6JOE	36			
IT9VDQ	197	751		EA1WX	89		<b>F5MNK</b>	<b>50</b>		W0VX	34			
N5PHT	182	1437		W0VX	88		<b>K5IX</b>	<b>50</b>		KZ5D	34			
N1EN	181	1920		N1EN	86		<b>K3SEN</b>	<b>50</b>		KR3E	34			
EA8OM	177	2640		W9ILY	84		W9ILY	49		W1UU	33			
W9ILY	169	2537		PA7RA	79		W0VX	49		K1ESE	33			
F6JOE	154	2481		F6JOE	79		N8BJQ	49		W9ILY	32			

Call	ACA	CMA		Call	DX Total		Call	WAS		Call	WAE		Call	WAZ
NA6O	151	1101		KZ5D	78		K6RB	49		N1EN	32			
K6DGW	140	1460		DL8PG	77		K6DGW	49		F5MKN	32			
W1UU	136	1939		W1UU	74		K1ESE	49		EA1WX	32			
K5IX	116	558		KR3E	73		GW0ETF	49		PA7RA	31			
K2ZC	112	767		AD1C	73		AD1C	49		DL8PG	31			
KE4S	104	660		N1ZX	70		AA3B	49		IK0YVV	30			
JF2IWL	67	870		F5MKN	68		WB9G	48		NN6T	29			
I5EFO	46	188		NN6T	67		SM6CNN	48		IT9MUO	29			
W6NS	25	855		IT9MUO	67		NN6T	48		N1ZX	28			
AA3B	0	5292		GW0ETF	67		NA6O	48		GW0ETF	28			
K6RB	0	3245		N5PHT	60		N1ZX	48		IT9VDQ	27			
KZ5D	0	3239		IK0YVV	57		KZ5D	48		AD1C	25			
SM6CNN	0	2477		W6KY	54		KT5V	48		K6RB	23			
W6KY	0	1840		K6RB	54		IK0YVV	48		JF2IWL	23			
N2UU	0	1774		IT9VDQ	54		DL8PG	48		HB9ARF	23			
EA1WX	0	1655		4Z1UF	50		AB7MP	48		G4DRS	22			
AD1C	0	1630		WB9G	48		W6NS	47		4Z1UF	21			
OK1RR	0	1618		JF2IWL	47		NU7Y	47		N5PHT	20			
NN6T	0	1577		G4DRS	45		KR3E	47		K2ZC	20			
GW0ETF	0	1451		HB9ARF	41		JF2IWL	47		I5EFO	20			
KG5U	0	1322		K3SEN	37		WX7SJ	46		WB9G	19			
PA7RA	0	1200		K2ZC	37		KG5U	46		G3YJQ	18			
KR3E	0	1136		W0EJ	36		K0DTJ	46		KG5U	17			
F5MKN	0	1111		KG5U	35		IT9VDQ	46		W6KY	16			
PA4N	0	955		K6DGW	34		EA1WX	46		KE4S	16			
N1ZX	0	940		KT5V	32		KE4S	45		K3SEN	15			
4X6GP	0	906		KE4S	32		K2ZC	45		NN4K	13			
WB9G	0	888		W6NS	29		PA7RA	44		KT5V	11			
W5ASP	0	869		NA6O	29		OK1RR	44		W0EJ	10			
KT5V	0	814		G3YJQ	27		NN4K	44		G3XLG	10			
IK0YVV	0	767		K0DTJ	25		IT9MUO	44		NA6O	9			
W0EJ	0	754		NN4K	24		KM4FO	43		K6DGW	8			
HB9ARF	0	723		I5EFO	24		HB9ARF	43		W5TM	7			
NN4K	0	671		NU7Y	21		G4DRS	43		G0DJA	7			
K0DTJ	0	668		K5IX	19		OH2BN	42		K0DTJ	6			
WX7SJ	0	610		G3XLG	18		NV9X	38		W6NS	5			
WT2P	0	574		WT2P	14		G3YJQ	37		KM4FO	5			
OH2BN	0	530		AB7MP	14		4Z1UF	36		K5IX	5			
KM4FO	0	500		W5TM	11		WT2P	34		WT2P	4			
AB7MP	0	464		KM4FO	10		W5TM	32		AB7MP	3			
N7WY	0	403		G0DJA	10		I5EFO	32		NV9X	1			
G4DRS	0	353		NV9X	4		G3XLG	31						
W5TM	0	235		KE6K	4		KE6K	17						
G3YJQ	0	234					G0DJA	8						

Call	ACA	CMA		Call	DX Total		Call	WAS		Call	WAE		Call	WAZ
G3XLG	0	201												
NV9X	0	149												
KE6K	0	116												
G0DJA	0	23												
PA1FOX	0	5												

**Pete** W1RM

[Back to Contents](#)

[Next Article](#)

## New Members

[Colin Jenkins KU5B](#)

With great pleasure we welcome the following new members to CWops:

1574 IW5EFO\* Dan  
 1575 K7RR\* Pete  
 1576 KL9A Chris  
 1577 W4TJE\* Jack  
 1578 AA7FV\* Darrel  
 1579 K3UA\* Phil  
 1580 N7RCS\* Jim  
 1581 DL1QQ\* Sandy  
 1582 W7SAG\* John  
 1583 G4NVR Phil  
 1584 K5XU\* Mike  
 1585 M0GGK Dave  
 1586 NG7W\* Matt  
 1587 VE4MR\* Kevin  
 1588 WB9QDL Ken  
 1589 W8BBQ Mark  
 1590 NJ8M\* Morgan  
 1591 W4VG Jay  
 1592 K4OV\* Rob  
 1593 K1EBY Frank  
 1594 K7MOA\* Key

\* = Life Member

Here is a photo of new member Sandy Raeker DL1QQ, a recent competitor at WRTC 2014 in New England, now helping to put on WRTC 2018 in Germany. Sandy her teammate Irina DL8DYL came in 21<sup>st</sup> out of 59 teams, a very impressive showing in this best-of-the-best competition. I believe Sandy and Irina were the

first YL team in the history of WRTC!



[Back to Contents](#)

[Next Article](#)

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## Current Nominees

As of March 20, 2016:

**Need Sponsors:** N5KT, N2WY, W5BQ, W5TUF, NX8L, KC3CVN

**Invitations Extended:** SV5BYR, W4MY

For more details about nominees and up-to-date status, check the “Members Only” pages on the Website: [www.CWops.org](http://www.CWops.org).

For information about joining CWops, check the Website under “Membership.”

[Back to Contents](#)

[Next Article](#)

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## QTX Report

### Enjoying the Art of Conversational CW

by [John Huffman K1ESE](#)

*QTX is a way of counting conversational CW QSOs. One point is awarded for each QSO of 20 minutes or longer. We have two ways to recognize QTX activities - the QTX Plaque and the QTX Achievement Medal.*

It's a short month and we appreciate your reports, large or small. Here's the latest tally of this month's CW conversations of 20 minutes or longer.

## QTX Standings

Below find the February QTX reports received -

Call	Feb
KI4XH	63
WB6BEE	57
K5KV	57
AC4BT	54
K1ESE	48
K5YQF	40
N5IR	37
KC0VKN	22
NN6T	21
KB6NU	21
K4AHO	18
WC5W	17
WA8IWK	12
W3WHK	11
K6HP	9
N1ZX	6
I5EFO	6
K6RB	5
KE6OIO	3

Fred KI4XH had a good month with 63, a score that would have held up in a longer month. Don WB6BEE and Benny K5KV tied for second with just under two QTX QSOs per day. Jerry AC4BT was just behind. We totaled the same number of participants, but QSOs were down due to the short month. We should be back to normal in March.

Personal bests for the year were submitted by KI4XH, K5KV, AC4BT, K5YQF, KC0VKN, and I5EFO. WC5W, WA8IWK, and K6HP sent in their first reports of the year.

We award QTX medals for the following totals at the end of the year -

Gold Medal - 400 QTX points

Silver Medal - 300 QTX points

Bronze Medal - 200 QTX points

It will be fun to see if you can accumulate the contacts needed to reach each level. Average about 18 rag chews each month to receive an award.

## QTX Year to Date

<u>Call</u>	<u>YTD</u>
WB6BEE	129
KI4XH	119
K1ESE	113
K5KV	108
AC4BT	97
N5IR	91
K5YQF	76
K4AHO	50
NN6T	49
KB6NU	47
KC0VKN	40
N1ZX	29
W3WHK	23
WC5W	17
K6RB	14
WA8IWK	12
KE6OIO	12
I5EFO	11
K6HP	9
K3TN	4
N9SE	3
W5JQ	2

Once again, Don WB6BEE is off to a good lead. Only time will tell if it's the start of a long break-away or if Don is pacing the pack. Everyone is within striking distance this early in the year.

Good luck with your totals.

Thanks to all for your participation.

73,

**John** K1ESE, CWops #792, *QTX Manager*

*QTX – Encouraging Conversational CW*

[Back to Contents](#)

[Next Article](#)

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## Upcoming CW Operating Events

Joe Staples W5ASP

*This brief list of operating events is intended to provide members with options for using and improving their CW skills in less intense and more casual on-the-air activities.*

Both the Russian DX and JIDX CW contests should be challenging venues for most CW operators. Each provides the opportunity to work a wide range of DX entities staffed by experienced operators. Even short periods of checking the bands can be quite productive.

Just a reminder to those who may have missed it earlier, the FOC QSO Party, unlike the FOC Marathon, is open to all radio amateurs world-wide. The only limitation is that non-FOC members may work only FOC members, not each other. FOC members can be distinguished by the addition of their FOC Number to their exchange.

The SARA (Slovak Amateur Radio Association) low power sprint takes place annually on Easter Monday. The exchange is rather different, i.e. RST, IARU Locator (first four designators) and Power Category. (example: 579 JN98 C). The "IARU Locator" is your Grid Square; the power designators are listed in the Rules (which you should read). This is one of those events which may or may not occur ... plans and past results are bit sketchy. Take a look if you have the time, and post your comments.

The LZ Open 40 Meter Sprint is probably not accessible except to Europeans and some fortunate East Coasters. It does have several unique features, among which is the ability to rework a station after a 30 minute interval. Any comments would be welcome.

Once again there is veritable flood of state QSO parties on the docket. Several of them have featured high levels of mobile activity in past years, and can provide an interesting operating session.

'till next time ... Keep on pounding.

### *MARCH/APRIL EVENTS*

**Russian DX Contest** 1200Z, Mar 19th to 1200Z, Mar 20th  
<http://www.rdxo.org/asp/pages/rulesg.asp>

FOC QSO Party 0000Z-2359Z, Mar 26<sup>th</sup>  
<http://g4foc.org/qsoparty/>

**JIDX CW Contest** 0700Z, Apr 9<sup>th</sup> to 1300Z, Apr 10<sup>th</sup>  
<http://www.jidx.org/jidxrule-e.html>

SARA Low Power Spring Sprint 1400Z-2000Z, Mar 28  
<http://www.hornucopia.com/contestcal/lowpowerspringsprint2015.pdf>

LZ Open 40m Sprint 0400Z-0800Z, Apr 2

<http://www.lzopen.com/lzocc40/indexF.htm>

NCCC Sprint	0230Z-0300Z, Mar 25 <sup>th</sup>
NCCC Sprint	0230Z-0300Z, Apr 1 <sup>st</sup>
NCCC Sprint	0230Z-0300Z, Apr 8 <sup>th</sup>
NCCC Sprint	0230Z-0300Z, Apr 15 <sup>th</sup>

<http://www.ncccsprint.com/rules.html>

NAQCC CW Sprint	0030Z-0230Z, Apr 13 <sup>th</sup>
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[www.naqcc.info/](http://www.naqcc.info/)

SKCC Sprint	0000Z-0200Z, Mar 23 <sup>rd</sup>
SKCC Weekend Sprintathon	1200Z, Apr 9 <sup>th</sup> to 2400Z, Apr 10 <sup>th</sup>

[http://www.skccgroup.com/operating\\_activities/weekday\\_sprint/](http://www.skccgroup.com/operating_activities/weekday_sprint/)

Louisiana QSO Party	1400Z, Mar 19 <sup>th</sup> to 0200Z, Mar 20 <sup>th</sup>
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[http://laqp.louisianacontestclub.org/laqso\\_rules.htm](http://laqp.louisianacontestclub.org/laqso_rules.htm)

Virginia QSO Party	1400Z, Mar 19 <sup>th</sup> to 0200Z, Mar 20 <sup>th</sup> and 1200Z-2400Z, Mar 20 <sup>th</sup>
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[http://www.qsl.net/sterling/VA\\_QSO\\_Party/2016\\_VQP/2016\\_VQP\\_Rules.html](http://www.qsl.net/sterling/VA_QSO_Party/2016_VQP/2016_VQP_Rules.html)

Mississippi QSO Party	1400Z, Apr 2 <sup>nd</sup> to 0200Z, Apr 3 <sup>rd</sup>
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[http://www.arrlmiss.org/2016\\_Mississippi\\_QSO\\_Party\\_-\\_Rules.pdf](http://www.arrlmiss.org/2016_Mississippi_QSO_Party_-_Rules.pdf)

Missouri QSO Party	1400Z, Apr 2 <sup>nd</sup> to 0400Z, Apr 3 <sup>rd</sup> and 1400Z-2000Z, Apr 3 <sup>rd</sup>
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[http://www.w0ma.org/mo\\_qso\\_party.htm](http://www.w0ma.org/mo_qso_party.htm)

New Mexico QSO Party	1400Z, Apr 9 <sup>th</sup> to 0200Z, Apr 10 <sup>th</sup>
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<http://www.newmexicoqsoparty.org/>

Georgia QSO Party	1800Z, Apr 9 <sup>th</sup> to 0359Z, Apr 10 <sup>th</sup> and 1400Z-2359Z, Apr 10 <sup>th</sup>
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<http://www.georgiaqsoparty.org/>

Nebraska QSO Party	1400Z, Apr 16 <sup>th</sup> to 0200Z, Apr 17 <sup>th</sup> and 1400Z-2300Z, Apr 17 <sup>th</sup>
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<http://www.qcwa.org/chapter025-rules-ne-qso-party-2016.pdf>

Michigan QSO Party	1600Z, Apr 16 <sup>th</sup> to 0400Z, Apr 17 <sup>th</sup>
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<http://www.miqp.org/Rules.htm>

Ontario QSO Party	1800Z, Apr 16 <sup>th</sup> to 0500Z, Apr 17 <sup>th</sup> and 1200Z-1800Z, Apr 17 <sup>th</sup>
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rules at: <http://www.va3cco.com/oqp/rules.htm>

North Dakota QSO Party  
<http://w0nd.com/ndqso15.pdf>

1800Z, Apr 16<sup>th</sup> to 1800Z, Apr 17<sup>th</sup>

[Back to Contents](#)

-30-

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